06/18/04

ITW AF

JUN 17 2004

FEE TRANSMITTAL

MAIL STOP APPEAL BRIEF-PATENTS

Complete If Known	
Application No.	09/630,595
Filing Date	August 1, 2000
First Named Inventor	Rau
Examiner Name	A. J. Fischer
Group Art Unit	3627
Attorney Docket No.	47004.000049

Total Amount Of Payment	($) 330.00

METHOD OF PAYMENT (check one)

1. ☒ The Commissioner for Patents is hereby authorized to charge indicated fees and credit any over payments to **Deposit Account No. 50-0206** in the name of Hunton & Williams LLP.

2. ☐ Check Enclosed. The Commissioner for Patents is hereby authorized to charge any variance between the amount enclosed and the Patent Office charges to **Deposit Account No. 50-0206** in the name of Hunton & Williams LLP, 1900 K Street, N.W., Suite 1200, Washington, D.C. 20006-1109.

FEE CALCULATION

1. BASIC FILING FEE ☐ Large Entity ☐ Small Entity

	FEE PAID
Utility Filing Fee	$
Design Filing Fee	$
Plant Filing Fee	$
Reissue Filing Fee	$
Provisional Filing Fee	$

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Fee Description		Fee Paid
☐	Surcharge - late filing fee or oath	$
☐	Surcharge - late provisional filing fee or cover sheet	$
☐	_____ Month Extension of Time	$
☐	Notice of Appeal	$
☒	Filing Brief in Support of Appeal	$ 330.00
☐	Request for Oral Hearing	$
☐	Utility Issue Fee (or Reissue) (including Publication Fee, if necessary)	$
☐	Design Issue Fee	$
☐	Plant Issue Fee	$
☐	Petition to Commissioner	$
☐	Petition to Revive (Unavoidable)	$
☐	Petition to Revive (Unintentional)	$
☐	Petitions Related to Provisional Applications	$
☐	Submission of Information Disclosure Statement	$
☐	Filing Submission After Final Rejection	$
☐	Recording Each Patent Assignment Per Property	$
☐	Filing Request for Reexamination	$
☐	Other (specify) _____	$

2. EXTRA CLAIMS FEES

CLAIMS AS AMENDED

For	Number Present	Highest Number Paid For	Extra	Rate Large Entity	Rate Small Entity	Amount
TOTAL CLAIMS		20	0	x $ 18.00	x $ 9.00	$ 0.00
INDEPENDENT CLAIMS		3	0	x $ 86.00	x $ 43.00	$ 0.00
MULTIPLE DEPENDENT CLAIMS				$ 290.00	$ 145.00	$ 0.00
TOTAL EXTRA CLAIMS FEES						**$ 0.00**

SUBMITTED BY			Complete (if applicable)	
Typed or Printed Name	Nancy J. Flint		Registration No.	46,704
Signature		Date	June 17, 2004	

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number	:	09/630,595	Confirmation No.: 5920
Applicant	:	Scott W. Rau et. al.	EV126128072US
Filed	:	August 1, 2000	
Title	:	System and Method for Transponder-Enabled Account Transactions	
TC/Art Unit	:	3627	
Examiner:	:	Andrew J. Fischer	
Docket No.	:	47004.000049	
Customer No.	:	**21967**	

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPEAL BRIEF

In accordance with 37 C.F.R. § 1.192(a), Appellants hereby file this Appeal Brief in triplicate in relation to the above-referenced patent application ("Application"). This brief has been filed within two months of the filing of the Notice of Appeal. The Commissioner is hereby authorized to charge the required fee of $330.00 from the undersigned's Deposit Account No. 50-0206. It is believed that no further fees are due. If a variance is found from the amount authorized, please credit or charge the difference to the undersigned's Deposit Account No. 50-0206.

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST 1

II. RELATED APPEALS AND INTERFERENCES 1

III. STATUS OF CLAIMS 1

IV. STATUS OF AMENDMENTS 2

V. SUMMARY OF INVENTION 2

A. The Technology. 2

B. The Embodiments of the Invention Defined By the Claims On Appeal. 2

VI. ISSUES 3

VII. GROUPING OF CLAIMS 5

VIII. ARGUMENT 5

A. The objection to the Specification under 35 U.S.C. § 132 for allegedly introducing new matter into the disclosure is improper and should be overturned. 5

B. The rejection of claims 26, 28-33 and 35-40 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement is improper and should be overturned. 6

1. The Specification as filed provides support for a separate "authorization unit" which determines authorization. 7

a. The Specification as filed provides support for a separate "authorization unit" which determines authorization. 7

b. This rejection should be overturned because the Examiner did not meet his initial burden of presenting evidence or reasoning why persons skilled in the art would not recognize in the original disclosure a description of the invention defined by the claims. 8

2. The Specification as filed provides support for the claim term "receiving by a transponder server of at least one issuing bank . . . at least some transponder information."....9

3. The Specification as filed provides support for the specific elements of account table 112....10

C. The rejection of claims 26, 28-33 and 35-40 under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention should be overturned....11

D. The rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 102(b) based on U.S. Patent No. 6,276,311 to Hennige ("Hennige") is improper and should be overturned....11

E. The rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 102(b) over Swartz in view of U.S. Patent No. 5,253,345 to Fernandes et. al. ("Fernandes") is improper and should be overturned....13

F. The Examiner's construction of the terms "transponder" and "transponder identification information" is unreasonable, overly broad and inconsistent with the specification....15

G. The rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 103(a) over Fernandes in view of U.S. Patent No. 5,640,002 to Ruppert et. al. ("Ruppert") is improper and should be overturned....18

H. The Examiner's assertions that claim 26 does not have a wireless interface pursuant to the doctrine of claim differentiation is incorrect as a matter of law....19

I. Claims 37 and 38 are separately patentable over claims 26, 28-33, 35, 36, 39 and 40....21

J. Claim 40 is separately patentable over claims 26, 28-33 and 35-39....21

CONCLUSION....22

APPENDIX A LISTING OF PENDING CLAIMS....A-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number	:	09/630,595	Confirmation No.:	5920
Applicant	:	Scott W. Rau et. al.		
Filed	:	August 1, 2000		
Title	:	System and Method for Transponder-Enabled Account Transactions		
TC/Art Unit	:	3627		
Examiner:	:	Andrew J. Fischer		
Docket No.	:	47004.000049		
Customer No.	:	**21967**		

APPEAL BRIEF

In response to the Office Action dated January 21, 2004, finally rejecting pending claims 26, 28-33 and 35-40 (the "Final Rejection"), Appellants respectfully request that the Board of Patent Appeals and Interferences reconsider and withdraw the rejections of record, and allow all pending claims, which are attached hereto as Appendix A.

I. REAL PARTY IN INTEREST

The real party in interest is Bank One Delaware, N.A. (f/k/a First USA Bank, N.A.), the assignee of the above-referenced application.

II. RELATED APPEALS AND INTERFERENCES

There are no known interferences. Appellants filed a Notice of Appeal on March 10, 2004 in related patent application serial no. 10/143,581, and filed an Appeal Brief on May 6, 2004. Application serial no. 10/143,581 is a divisional of the Application involved in this appeal.

III. STATUS OF CLAIMS

Claims 26, 28-33 and 35-40 are pending in this application. The rejection of claims 26, 28-33 and 35-40 is appealed.

IV. STATUS OF AMENDMENTS

An Amendment after Final Rejection was filed on April 8, 2004. The Amendment after Final Rejection was not entered as noted in an Advisory Action dated April 15, 2004 on the grounds that the claim amendments allegedly raise new issues that would require further consideration and/or search.

V. SUMMARY OF INVENTION

Appellants believe that a brief discussion of the technology, followed by a brief summary of the embodiments of the invention defined by the claims on appeal and the problems solved by the embodiments of the invention, will assist the Board of Patent Appeals and Interferences (hereinafter referred to as the "Board") in appreciating the significant advances made by the invention.

A. The Technology.

The use of electromagnetically-coupled transducers for commercial transaction processing has become increasingly popular in recent times. The advent of compact, inexpensive electronics, transponder-equipped point of sale equipment, and attendant information processing assets have enabled a variety of vendors to offer account-linked transaction systems. Those systems include, for example, subway or other transportation devices, telephone calling devices, and others such as the SpeedPass™ offered by Mobil Corp. for gasoline point of sale transactions. In that and other systems, a receiver emits electromagnetic signals to a device in proximity to a gasoline pump over radio frequencies (RF), activating an embedded transponder within the transaction device. The transaction device is identified by some sort of identification information, which information is then relayed from the point of sale to an offsite information processing facility. Current systems involve further processing of the transponder identification information and purchase information to complete a sale using the transponder.

B. The Embodiments of the Invention Defined By the Claims On Appeal.

As described in the Specification, the invention defined in the claims on appeal generally involves a method for authorizing transponder-enabled transactions. The method generally

relates to the presentation and sensing of an electromagnetically coupled transponder to an RF-enabled point of sale system. *See* Specification at p. 2, lines 15-17. In the practice of the invention defined in the claims on appeal, the transponder is encoded with identifying or serializing information ("transponder identification information") which is emitted upon presentation of the transponder and a transaction for payment at a point of sale device. *See* Specification at p. 2, lines 17-18; p. 5, lines 8-12 and p. 5, line 21 to p. 6, line 2. The transponder identification information and payment amount of the purchase are received by a transaction server that is located at an issuing bank, a financial institution or a credit network. *See* Specification at pp. 9-10, lines 15-22; Fig. 2. The transponder identification information is used at the transaction server to retrieve some of the user's financial account information. *See* Specification at p. 6, lines 3-6 and p. 10, lines 6-10; Abstract; Fig. 2. An authorization unit determines whether any or all of the payment amount can be applied to the financial account using the financial account information and the payment amount, which authorization is then communicated back to the point of sale device to complete the transaction. *See* Specification at p. 10, lines 6-10; Fig. 2. The transponder may be registered to be associated with one or more user accounts from a client workstation using Web or other network-enabled interfaces. *See* Specification at pp. 8, line 22 to p. 9, line 3.

One of the advantages of the invention is that the transponder may be embedded in a personal article, such as a key chain or wristwatch. *See* Specification at p. 4, lines 15-17; Abstract.

VI. ISSUES

The issues on appeal are as follows:

A) Whether the objection to the Specification under 35 U.S.C. § 132 for allegedly introducing new matter into the disclosure is proper.[1]

---

[1] Appellants recognize that typically objections are normally reviewable by petition to the Commissioner only. However, where the alleged new matter that is objected to is "introduced to or affects the claims, thus necessitating their rejection on this ground, the question becomes an appealable one." *See* MPEP § 608.04(c). Appellants submit that the alleged new matter objected to in the Specification also constitutes one of the grounds for rejection of the pending

B) Whether the rejection of claims 26, 28-33 and 35-40 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement is proper.[2]

C) Whether the rejection of claims 26, 28-33 and 35-40 under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention is proper.[3]

D) Whether the rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 102(b) based on U.S. Patent No. 6,276,311 to Hennige ("Hennige") is proper.[4]

E) Whether the rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 102(b) based on U.S. Patent No. 5,253,345 to Fernandes et. al. ("Fernandes") is proper.[5]

F) Whether the rejection of claims 31 and 32 under 35 U.S.C. § 103(a) over Fernandes in view of U.S. Patent No. 5,640,002 to Ruppert et. al. ("Ruppert") is proper.

---

claims under 35 U.S.C. § 112, first paragraph, and therefore this objection is reviewable on appeal.

[2] The Final Rejection states that claims 26-40 are rejected on these grounds. However, Applicants canceled claims 27 and 34 in an Amendment dated June 4, 2003, and requested acknowledgement of this cancellation in the Amendment after Final Rejection dated April 8, 2004. Despite this request, the Examiner noted in the Advisory Action dated April 15, 2004 that claims 26-40 are rejected. In this Appeal Brief, Applicants will address the rejections as they relate to claims 26, 28-33 and 35-40.

[3] The Final Rejection and Advisory Action state that claims 26-40 have been rejected on these grounds. As noted in fn 2, claims 27 and 34 were canceled in an Amendment dated June 4, 2003. In this Appeal Brief, Applicants will address the rejections as they relate to claims 26, 28-33 and 35-40.

[4] The Final Rejection and Advisory Action state that claims 26-30 and 33-40 have been rejected on these grounds. As noted in fn 2, claims 27 and 34 were canceled in an Amendment dated June 4, 2003. In this Appeal Brief, Applicants will address the rejections as they relate to claims 26, 28-30, 33 and 35-40.

[5] The Final Rejection and Advisory Action state that claims 26-30 and 33-40 have been rejected on these grounds. As noted in fn 2, claims 27 and 34 were canceled in an Amendment dated June 4, 2003. In this Appeal Brief, Applicants will address the rejections as they relate to claims 26, 28-30, 33 and 35-40.

VII. GROUPING OF CLAIMS

Appellants submit that:

Claims 26, 28-33, 35, 36 and 39 stand or fall as a group.

Claims 37 and 38 stand or fall on their own.

Claim 40 stands or falls on its own.

The reasons why claims 37, 38 and 40 are separately patentable are provided in the Argument at Sec. VIII(I) and (J).

VIII. ARGUMENT

The rejections of all pending claims in the Final Rejection suffer from a variety of insufficiencies: they fail to present a *prima facie* case of anticipation and/or obviousness; they present broad constructions that are unreasonable and inconsistent with the specification and the claims; they give different claim terms identical meanings, thus rendering the claims virtually meaningless; and they are based on incorrect legal standards. Further, the Examiner has now raised rejections only in the Final Rejection on grounds that have been pending since the Application was filed in August, 2000 and that could have been raised earlier, but were not. These late raised rejections have denied Applicants a fair opportunity to present arguments in response.

A. The objection to the Specification under 35 U.S.C. § 132 for allegedly introducing new matter into the disclosure is improper and should be overturned.

The objection to the Specification under 35 U.S.C. § 132 for allegedly adding new matter, and specifically reference to an "authorization unit," should be overturned because the Examiner has not provided any grounds for this rejection other than stating that he "has carefully reviewed the original specification and can not locate any discussion of a separate 'authorization unit.'" *See* Final Rejection at ¶ 1 (the second ¶ 1 on p. 2 of the Final Rejection). That however, does not address whether one of ordinary skill in the art would recognize from reading the Specification as a whole that there is some unit in the transaction server that authorizes transactions, which has been termed by the Appellants as the "authorization unit."

The test for whether an amendment to an application constitutes new matter is whether

persons of ordinary skill in the art would recognize that the missing descriptive matter is necessarily present in the thing described. *See* MPEP § 2163.07(a). For example, where an application discloses a device that inherently performs a function, the application may later be amended to recite the function without adding new matter. *See* MPEP § 2163.07(a). The situation here is identical. One of the expressly disclosed functions of the transaction server is authorizing the transaction. *See* Specification at p. 9, lines 19-22. Therefore one of ordinary skill in the art would recognize that the transaction server has or is at least in communication with some unit that is capable of performing this function of "authorizing."

Support for this assertion is found in the specification where it expressly states that "In the embodiment illustrated in Fig. 2, the point of sale device 108 is additionally connected to a transaction server 116 via communications link 114 *for the purpose of authorizing in whole or in part transactions presented for payment using transponder 102.*" (emphasis added). *See* Specification at p. 9, lines 19-22. Appellants further disclosed that "the point of sale device 108 may communicate with transaction server 116 to *validate* a transaction amount or other information against account information stored in the transaction server 116." *See* Specification at p. 10, lines 7-10 (emphasis added). One of ordinary skill in the art of credit transactions would recognize that an authorization unit is necessarily present in or in communication with the transaction server 116 to perform the expressly disclosed functions of "authorizing" or "validating" a transaction presented for payment using the transponder. Also, the specification amendment that is objected to - "by authorization unit 134" - was placed in the specification directly after the phrase - "for the purpose of authorizing" - making clear that this "authorization unit" performs the described and disclosed function of "authorizing the transaction."

Accordingly, this amendment to the Specification does not constitute new matter and this objection should be overturned.

B. The rejection of claims 26, 28-33 and 35-40 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement is improper and should be overturned.

Claims 26, 28-33 and 35-40 have been rejected under 35 U.S.C. § 112, first paragraph allegedly for allegedly containing subject matter not described in the specification in such a way

as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention. *See* Final Rejection at ¶ 4. Here again, the Examiner has rejected the claims over the use of the term "authorization unit" as well as an alleged lack of disclosure of "receiving by a transponder server of at least one issuing bank . . . at least some transponder information" and the specific elements of account table 112.

1. The Specification as filed provides support for a separate "authorization unit" which determines authorization.

The Examiner asserts as the entire basis for this rejection that "Applicants' original specification does not disclose a separate 'authorization unit' which determines authorization. Applicants' originally filed specification appears to have the POS terminal perform the authorization." *See* Final Rejection at ¶ 4(b). This rejection should be overturned because a separate authorization unit is supported in the Specification as filed. Additionally, the Examiner did not meet his initial burden of presenting evidence or reasoning why persons skilled in the art would not recognize in the original disclosure a description of the invention defined by the claims.

a. The Specification as filed provides support for a separate "authorization unit" which determines authorization.

Just as for the objection under 35 U.S.C. § 132, discussed in Sec. VIII(A) *supra*, this rejection is improper because the Specification as originally filed provides support for a separate " authorization unit" that performs the expressly disclosed function of "authorizing the transaction." This rejection should be withdrawn because a separate "authorization unit" is supported in the Specification as originally filed.

Similarly as for the objection to the Specification, courts have set forth the "essential question to be addressed" for determining whether the written description requirement under 35 U.S.C. § 112, first paragraph has been complied with - "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." *See* MPEP § 2163.02; *citing In re Gostelli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989). The subject matter need not be described literally ("*in haec verba*") in order for the disclosure to satisfy the written description requirement." *See* MPEP § 2163.02. The entire

specification should be reviewed to determine compliance with the written description requirement. *See* MPEP § 2163(II)(A)(2). Additionally, "[i]nformation which is well known in the art need not be described in detail in the specification." *See* MPEP § 2163(II)(A)(2), *citing Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379-80, 231 USPQ 81, 90 (Fed. Cir. 1986). This claim term is supported by the same portions of the Specification as referenced to support the "new matter" rejection under 35 U.S.C. § 132 discussed in Sec. VIII(A). *See* Specification at p. 9, lines 19-22; p. 10, lines 7-10.

Further, the Examiner has provided no citation in support of the assertion that the specification as originally filed "appears to have the POS terminal perform the authorization." *See* Final Rejection at ¶ 4(b). Accordingly, Applicants cannot fashion a meaningful response to this assertion. However, as discussed, the Specification as originally filed supports an authorization unit separate from the POS terminal that authorizes transactions presented for payment using the transponder. For at least these reasons, this rejection should be overturned.

b. This rejection should be overturned because the Examiner did not meet his initial burden of presenting evidence or reasoning why persons skilled in the art would not recognize in the original disclosure a description of the invention defined by the claims.

Additionally, this rejection should be overturned because the Examiner failed to meet his initial burden of "presenting evidence or reasoning to explain why persons skilled in the art would not recognize [in the Specification, as originally filed,] a description of the invention defined by the rejected claims," as required under MPEP § 2163(II)(A)(3)(b). The entire rejection consists of the following:

> Applicants' original specification does not disclose a separate 'authorization unit' which determines authorization. Applicants' originally filed specification appears to have the POS terminal perform the authorization.

See Final Rejection at ¶ 4(b). This does not meet the Examiner's burden of showing why persons of ordinary skill in the art would not recognize the description of the invention defined by the claims and constitutes further grounds for overturning this rejection.

2. The Specification as filed provides support for the claim term "receiving by a transponder server of at least one issuing bank . . . at least some transponder information."

The Examiner has rejected claims 26, 28-33 and 35-40 because "Applicants' original filed specification does not disclose 'receiving by a transponder server of at least one issuing bank . . . at least some transponder information.'" *See* Final Rejection at ¶ 4(a). Applicants respectfully submit that the written description requirement does not require that a claim element be disclosed *in haec verba* but rather the standard is whether there is express, implicit or inherent support in the specification. *See* MPEP § 2163(I)(B). "The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed." *Id., citing Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991).

Applicants submit that the specification as filed provides support for this limitation. A review of the entire application, which is the mandated approach to determining support for the claimed invention, shows that the invention of claim 26 and all dependent claims is directed to a method for transponder-enabled transactions. *See* Specification at p. 2, lines 14-15. The transactions disclosed are commercial transactions. *See* Specification at p. 4, lines 10-12. The use of commercial transaction processing equipment is disclosed. *See* Specification at p. 4, lines 13-14. The transponder of the invention contains an encoded ID. *See* Specification at p. 5, lines 3-4. In both disclosed embodiments, there is an account table which includes account number, balance, limit and other information for *inter alia* a debit account or a credit account. *See* Specification at p. 5, lines 7-9. The user of the invention approaches a point of sale device to initiate and complete a transaction. *See* Specification p. 4, line 22-p. 5, line 2. The user waves a transponder in proximity of a receiver, which is connected to a point of sale device. *See* Specification at p. 4, lines 10-11; p. 5, lines 15-18. The transponder may establish a link with the receiver and be activated to radiate the encoded transponder ID to the receiver. *See* Specification at p. 5, line 18 to p. 6, line 1. Account information associated with the transponder ID and stored in either the transponder or in the transaction server is accessed for the purpose of authorizing the transaction. *See* Specification at p. 2, lines 18-20; p. 9, lines 2-3 and line 16- p.

10, line 4. The total purchase price may be validated against *inter alia* available credit for completion of the transaction. *See* Specification at p. 6, lines 8-10. In the embodiment of Fig. 2 and claim 26, the transaction server is connected to the point of sale device via a communications link "for the purpose of authorizing in whole or in part transactions presented for payment." *See* Specification at p. 9, lines 19-22.

A reading of the specification as filed thus clearly discloses that the method of the invention is intended to be used in connection with *inter alia* credit card transactions. *See also* Specification at p. 8, lines 19-21; p. 9, lines 4-6. Those of ordinary skill in the art know that credit card transactions are authorized by the issuing bank or financial institution that issued or acquired the credit card account, or else by a data processor which performs that service on behalf of the issuing bank. Such issuing banks and/or financial institutions are typically part of credit networks. Thus, one of ordinary skill in the art would understand from the specification when read in its entirety that where the claimed method is used for a credit card transaction, the point of sale device is connected with a transaction server of an issuing bank, a financial institution or a credit network over the communications link.

Applicants submit that this rejection should be overturned because the Specification as filed supports the claim term "receiving by a transponder server of at least one issuing bank . . . at least some transponder information."

3. The Specification as filed provides support for the specific elements of account table 112.

The Examiner has rejected claims 26, 28-33 and 35-40 because "Applicants' original filed specification does not disclose what are the specific elements of account table 112." *See* Final Rejection at ¶ 4(c). Claim 26 expressly claims that the financial account information comprises account number information, account type information, account balance information, and account limit information. Applicants submit that support for this limitation may be found in the specification as originally filed at p. 5, lines 7-9 (account table 112 may be or include account number, balance limit and other information for various types of accounts). Applicants therefore respectfully request that this rejection be overturned.

C. The rejection of claims 26, 28-33 and 35-40 under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention should be overturned.

The rejection of claims 26, 28-33 and 35-40 under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention is based on the rejection of claim 26 under 35 U.S.C. § 112, first paragraph. Sec. VIII(B) sets forth the reasons why the claim rejections under 35 U.S.C. § 112, first paragraph should be overturned. Accordingly, for those same reasons, this rejection should similarly be overturned.

D. The rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 102(b) based on U.S. Patent No. 6,276,311 to Hennige ("Hennige") is improper and should be overturned.

Claims 26, 28-30, 33 and 35-40 were rejected as allegedly unpatentable under 35 U.S.C. § 102(b) based on Hennige. *See* Final Rejection at ¶ 8. This rejection is improper and should be overturned because

Hennige, according to the Examiner, discloses an ordinary credit card transaction including "receiving by a transponder server of a credit network at least some transponder identification information (credit account number) emitted from a transponder (contacts 100 in an ordinary credit card) substantially upon presentation of both the transponder and a transaction for payment at a POS device, the payment comprises a payment amount (inherent in all payments)." *See* Final Rejection at ¶ 8. According to the Examiner, Hennige further discloses "receiving (at the credit authorization agency) at least some financial account information (the account number transmitted from the merchant) linked to the transponder identification information in an account table (the table includes account[] holder's name, billing address, available balance and credit, etc.); determining authorization based on the payment amount . . . ; communicating authorization to the POS device . . . ; paying the authorized payment amount to a merchant account associated with a merchant . . . ; issuing the transponder (credit card) to the holder of the account (the consumer); receiving the transponder identification information from multiple POS devices . . . ; the account type is a credit card; the transponder is embedded in a

transaction card (contacts 100 are embedded in the overall card); and registering the financial account information (activating the credit card) via a network registration interface (a telephone)." *See* Final Rejection at ¶ 8.

Applicants respectfully submit that Hennige does not disclose each and every limitation of claims 26, 28-30, 33 and 35-40. Further, as will be discussed in Sec. VIII(F), the Examiner's impermissibly overly broad construction of the term "transponder" as covering an ordinary credit card and "transponder identification information" as covering a "credit account number" leads to the erroneous conclusion that claims 26, 28-30, 33 and 35-40 are anticipated in part because Hennige discloses "*receiving* (at the credit authorization agency) at least some financial account information linked to the transponder identification information. . ." Rather, claims 26, 28-30, 33 and 35-40 claim "*receiving* by a transponder server . . . *transponder identification information* [and then] *retrieving* at least some of the financial account information associated with the transponder identification information from the account table." (emphasis added). The specification and the claims thus clearly distinguish transponder identification information from credit (or financial) account number information. In Hennige, credit account number is received by the transponder server, while in claim 26 transponder identification information is received by the transponder server.

Additionally, Hennige does not disclose a credit card that emits information. Ordinary credit cards have information embedded in the magnetic stripe and must be read by a card reader. Therefore, Hennige does not therefore disclose each and every limitation of claim 26.

Hennige also does not disclose the elements of claims 37 and 38 of embedding the transponder in a personal article such as a key chain, pager, watch, clothing, key or transaction card. In fact, the claim limitation "transaction card" in claim 38 further makes clear that the "transponder" of these claims is something other than an ordinary credit card, as the Examiner has asserted. Further, the Examiner fails to make a *prima facie* case that credit card activation discloses financial account registration as claimed in claim 40. The Examiner provides no reasoning of how "activation" of a credit card is consistent with the specification regarding registration of financial account information. Applicants submit that the specification description of registration of financial account information is completely *inconsistent* with credit

card activation. *See* Specification at p. 8, line 19 to p. 9, line 10. For example, the specification states that the user is interrogated to "identify or select which one or more accounts . . . [s/he] wishes to associate with the transponder." *See id.* at p. 9, lines 1-3. The Examiner has provided no reasoning why or how, and a person of ordinary skill in the art would not understand that, activation of an ordinary credit card permits a user to "identify or select" which accounts to associate with the credit card. Rather, account number information is already embedded in the magnetic stripe on the credit card prior to activation.

Hennige discloses only reading credit account information embedded in a magnetic stripe on an ordinary credit card; receiving a credit account number by a transponder server and then retrieving other financial account information linked to the credit account number. Since the transponder identification information in claim 26 is different from financial account information and since ordinary credit cards do not emit information, Applicants respectfully submit that Hennige does not disclose each and every limitation of claims 26, 28-30, 33 and 35-40, and respectfully request that this rejection be overturned.

E. The rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 102(b) over Swartz in view of U.S. Patent No. 5,253,345 to Fernandes et. al. ("Fernandes") is improper and should be overturned.

The Examiner has rejected 26, 28-30, 33 and 35-40 as allegedly anticipated by Fernandes. *See* Final Rejection at ¶ 9. The Examiner asserts that Fernandes "discloses an ordinary credit card transaction including receiving by a transponder server of a credit network at least some transponder identification information (credit account number) emitted from a transponder (magnetic stripe in an ordinary credit card . . .) substantially upon presentation of both the transponder and a transaction for payment at a POS device, the payment comprises a payment amount (inherent in all payments)." *See id.* According to the Examiner, Fernandes further discloses "receiving (at the credit authorization agency) at least some financial account information (the account number transmitted from the merchant) linked to the transponder identification information in an account table (the table includes account[] holder's name, billing address, available balance and credit, etc.); determining authorization based on the payment amount . . . ; communicating authorization to the POS device . . . ; paying the authorized

payment amount to a merchant account associated with a merchant . . . ; issuing the transponder (credit card) to the holder of the account (the consumer); receiving the transponder identification information from multiple POS devices . . . ; the account type is a credit card; the transponder is embedded in a transaction card . . . ; and registering the financial account information . . ." *See id.*

Just as for Hennige, Applicants respectfully submit that Fernandes does not disclose each and every limitation of claims 26, 28-30, 33 and 35-40. Further, as will be discussed in Sec. VIII(F), the Examiner's impermissibly overly broad construction of the term "transponder" as covering an ordinary credit card and "transponder identification information" as covering a "credit account number" leads to his erroneous conclusion that claims 26, 28-30, 33 and 35-40 are anticipated in part because Fernandes discloses "*receiving* (at the credit authorization agency) at least some financial account information linked to the transponder identification information. . ." Rather, claims 26, 28-30, 33 and 35-40 claim "*receiving* by a transponder server . . . *transponder identification information* [and then] *retrieving* at least some of the financial account information associated with the transponder identification information from the account table." (emphasis added). The specification and the claims thus clearly distinguish transponder identification information from credit (or financial) account number information. In Fernandes, credit account number is received by the transponder server, while in claim 26 transponder identification information is received by the transponder server.

Additionally, Fernandes does not disclose a credit card that emits information. Ordinary credit cards have information embedded in the magnetic stripe and must be read by a card reader. Therefore, Fernandes does not therefore disclose each and every limitation of claim 26.

Additionally, Fernandes does not disclose the elements of claims 37 and 38 of embedding the transponder in a personal article such as a key chain, pager, watch, clothing, key or transaction card. In fact, the claim limitation "transaction card" in claim 38 further makes clear that the "transponder" of these claims is something other than an ordinary credit card, as the Examiner has asserted. Further, the Examiner fails to make a *prima facie* case that credit card activation discloses financial account registration as claimed in claim 40. The Examiner provides no reasoning as to how "activation" of a credit card is consistent with the specification

regarding registration of financial account information. Applicants submit that the specification description of registration of financial account information is completely *inconsistent* with credit card activation, and this rejection should be overturned. *See* Specification at p. 8, line 19 to p. 9, line 10. For example, the specification states that the user is interrogated to "identify or select which one or more accounts . . . [s/he] wishes to associate with the transponder." *See id.* at p. 9, lines 1-3. The Examiner has provided no reasoning why or how, and a person of ordinary skill in the art would not understand that, activation of an ordinary credit card permits a user to "identify or select" which accounts to associate with the credit card. Rather, account number information is already embedded in the magnetic stripe on the credit card prior to activation.

Fernandes discloses only reading credit account information from a magnetic stripe on an ordinary credit card; receiving a credit account number by a transponder server and then retrieving financial account information linked to the credit account number. Just as for Hennige, since the transponder identification information of claim 26 is different from financial account information and since ordinary credit cards do not emit any information, Applicants respectfully submit that Fernandes does not disclose each and every limitation of claims 26, 28-30, 33 and 35-40, and respectfully request that this rejection be withdrawn.

F. The Examiner's construction of the terms "transponder" and "transponder identification information" is unreasonable, overly broad and inconsistent with the specification.

The Examiner set forth in the Final Rejection interpretations of several claim terms that render the claims inconsistent with the Specification. *See* Final Rejection at ¶ 13. Applicants specifically object to the Examiner's interpretation of the term "transponder" as a device that responds to a physical stimulus and emits an electrical signal in response to the stimulus." *See id.* at (g). This broad meaning leads to the Examiner's interpretation of the "transponder" of the claims as covering an ordinary credit card, as in Hennige and Fernandes. *See* Final Rejection at ¶¶ 8, 9. Further, this leads to the overly broad construction of the term "transponder identification information" as covering a credit account number of an ordinary credit card, as in Hennige and Fernandes. *See id.* To the extent that the interpretation of the claim term "transponder" differs between Applicants and the Examiner, Applicants were not informed until

the Final Rejection that the Examiner was utilizing such a broad construction and therefore could not prepare a response to address this rejection during prosecution.[6]

Further, these broad constructions are inconsistent with the specification and are unreasonably broad in that they render the claims virtually meaningless. Additionally, Applicants submit that this meaning is not how one of ordinary skill in the art would understand the term "transponder" as used in light of the specification. Importantly, this broad construction of the term "transponder" is inconsistent with the claims themselves because an ordinary credit card does not "emit" any information, as the term "emit" is commonly understood. Rather, the verb "emit" is a transitive verb which means to give off; to send out; to eject. *See* Merriam Webster's Collegiate Dictionary (10th ed. 1993) at p. 378. Rather, an ordinary credit card is a passive device that has information that is embedded in the magnetic stripe of the credit card and is read by a reader, just like a cassette tape.[7]

---

[6] The Examiner has repeatedly requested that Applicants "confirm" that they wish to be their own lexicographer, and also has asserted that he has made "final" the presumption that claim terms are to be given their "ordinary and accustom[sic]" meaning during prosecution. *See* Office Action of May 16, 2002 at ¶ 13; Office Action of October 29, 2002 at ¶ 12; Office Action of March 4, 2003 at ¶ 13; Final Rejection at ¶ 12. Applicants submit that the claim terms are to be given their broadest reasonable interpretation consistent with the specification. *See* MPEP § 2111. To the extent that the Examiner has imposed an obligation on Applicants to confirm the manner of interpretation of the claim terms in the Application, Applicants respectfully submit that the claims are to be construed as required by the patent statute, as interpreted by or further set forth by the CCPA and the Federal Circuit. Applicants are aware of no obligation to confirm that they have decided to be or not to be their own lexicographer. Rather, Applicants understand that the proper standard is that "the pending claims must be 'given their broadest reasonable interpretation consistent with the specification." *See In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000); MPEP § 2111.

[7] This understanding is consistent with common understanding of how credit cards and the transponders of the claims operate. For example, the Internet site "whatis.com" defines a passive transponder as a device that "allows a computer or robot to identify an object. Magnetic labels, such as those on credit cards and store items, are common examples. A passive transponder must be used with an active sensor that decodes and transcribes the data the transponder contains. The transponder unit can be physically tiny, and its information can be sensed up to several feet away." In contrast, "active transponders" are such devices as an "RFID (radio-frequency identification) device that transmits a coded signal when it receives a request from a monitoring or control point. The transponder output signal is tracked, so the position of the transponder can

Here, Applicants expressly described a transponder as an "electromagnetically-coupled transducer"; and an "electromagnetically coupled device[], generally activated by proximity to an RF-enabled receiving unit," and one of ordinary skill in the art would understand this to refer to an active transponder. *See* Specification at p. 1, lines 10-11; p. 3, lines 19-22. The term "transponder" has been included in the claims since the original application was filed back in August, 2000, nearly four (4) years ago. However, it is only now in the Final Rejection that the Examiner has asserted this broad construction of the term "transponder" although such a broad construction to cover ordinary magnetic stripe credit cards is inconsistent with not only the description of the term "transponder" in the specification but is also inconsistent with the claims. The Examiner's recently adopted definition of "transponder" as encompassing an ordinary credit card is *not* consistent with the specification. *See* Specification at p. 1, lines 10-11; p. 3, lines 19-22.

The inconsistency of the Examiner's overly broad construction is further demonstrated in that this meaning of the term "transponder" renders the claims virtually nonsensical and attributes the same meaning to two different claim terms. According to the Examiner's construction, claim 26 relates to a method of authorizing credit card transactions where a credit card is presented at a point of sale device; the credit card number as read from the credit card is transmitted to a credit authorization agency; the credit card number is used to retrieve financial account information, including the credit card number, from a database; and the transaction is authorized based on the retrieved financial account information and the payment amount.

This is unreasonable for two reasons. First, as discussed, an ordinary credit card does not emit any information but rather information is read from the card's magnetic stripe. Second, the Examiner has attributed both of the claim terms "transponder identification information" and "financial account number" to have the same meaning - the credit card account number.

---

be constantly monitored. The input (receiver) and output (transmitter) frequencies are preassigned." A copy of this website page is attached as Appendix B. Although a credit card may be considered at most a passive transponder, the common use of the term "transponder" to one of ordinary skill in the art is that of an "active transponder." *See* Appendix C (copies of web sites providing definitions of transponders).

However, credit account number is financial account information which is distinguished from the transponder identification information in claim 26. The specification as filed supports the position that transponder identification information is separate from and does not include financial account information. *See* Specification at p. 2, lines 18-19 ("the transponder may be preferably encoded with *not merely* identifying or serializing information, *but also* account information . . .") (emphasis added). *See also* Specification at p. 10, lines 3-10 (part or all of the account table may be stored in storage of the transaction server). Additionally, the Examiner has provided no basis to support the assertion that a credit account number is "transponder identification information." Rather, credit account number identifies an account, not a card. Such a construction is unreasonable, and therefore cannot be the proper meaning of these claim terms.

In light of this overly broad construction of the term "transponder" by the Examiner, the meaning of the term as set forth in the specification and as this term is understood by those of ordinary skill in the art, Applicants submit that the rejections based on these overly broad claim term meanings should be overturned.

G. The rejection of claims 26, 28-30, 33 and 35-40 under 35 U.S.C. § 103(a) over Fernandes in view of U.S. Patent No. 5,640,002 to Ruppert et. al. ("Ruppert") is improper and should be overturned.

The Examiner has rejected 26, 28-30, 33 and 35-40 as allegedly obvious over Fernandes in view of Ruppert. *See* Final Rejection at ¶ 11. The Examiner asserts that Ruppert discloses a card having RF and infrared capability to communicate with a POS device. *See id.* According to the Examiner, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Fernandes as taught by Ruppert and include RF capabilities for the card. *See id.*

However, Applicants previously argued how Fernandes does not disclose each and every limitation of claim 26, and specifically does not teach receiving transponder identification information by a transaction server, where the transponder identification information does not include financial account information, such as credit or account number information, and then retrieving financial account information associated with the transponder identification

information from an account table. *See* Sec. VIII(E). Ruppert does not disclose this limitation, either. At most, Ruppert discloses a scanning device that can emit credit card information that has been entered into it. *See* col. 3, lines 1-9. As previously discussed, though, a construction that equates credit account number with transponder identification information is inconsistent with the use of different terms in the claims and the ordinary meaning of these terms to one of ordinary skill in the art. *See* Sec. VIII(F). Also, there is no disclosure in Ruppert that the credit card account information that is entered into the scanning device identifies the scanning device, as the transponder identification information identifies the transponder in the claims at issue. Rather, the entered credit card account information in Ruppert identifies the credit card account itself regardless of the device that has stored this information. Therefore, the combination of Fernandes and Ruppert does not disclose each and every limitation of claim 26, and does not form a *prima facie* case of obviousness. Applicants respectfully request that this rejection be overturned.

H. The Examiner's assertions that claim 26 does not have a wireless interface pursuant to the doctrine of claim differentiation is incorrect as a matter of law.

The Examiner has asserted that, under the doctrine of claim differentiation, claim 26 is presumed *not* to have a wireless interface since claim 31, which depends on claim 26, expressly claims a wireless interface. Accordingly, the Examiner "adopts the presumption that the difference is significant and that the structural features are different as well." *See* Final Rejection at ¶ 14.

Applicants submit that the doctrine of claim differentiation does not compel such a conclusion, and that claim 26 properly covers embodiments that include a wireless interface. The assertion by the Examiner that claim 26 *does not* cover a wireless interface conflicts with the requirements of 35 U.S.C. § 112, fourth paragraph and MPEP § 608.01(n)(III). The statute states that, "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." MPEP § 608.01(n)(III) states that, "a proper dependent claim . . . shall not be conceivably be infringed by anything which would not also infringe the basic claim." If the Examiner's position were correct, in this case both the statute and the MPEP would be violated.

Consider a system as claimed in claim 31 which has a wireless interface between the transponder and the transponder receiver. According to the Examiner, claim 26 would therefore *not* have a wireless interface. A system having a wireless interface that infringed claim 31 would not infringe claim 26. Further, claim 31 would *not* include each and every limitation of claim 31. Such an interpretation directly contradicts the MPEP and therefore cannot be correct.

The cases cited by the Examiner do not hold otherwise. The *North American Vaccine* case is not about claim differentiation at all. *See North American Vaccine v. American Cyanamid Co.*, 7 F.3d 1571, 1577, 28 USPQ2d 1333, 1337 (Fed. Cir. 1993). The *Toro* case and the *CAE Screenplates* case are consistent with the statute and the MPEP. In *Toro*, the court held that an independent claim could not be interpreted broader than as supported in the specification. *See Toro Co. v. White Consolidated Indust., Inc.*, 199 F.3d 1295, 53 USPQ2d 1065, 1070 (Fed. Cir. 1999). In *CAE Screenplates*, the court compared the scope of three different independent claims based on the use of different terminology in those claims, not the scope of a dependent claim under the doctrine of claim differentiation. *See CAE Screenplates, Inc. v. Heinrich Fielder GmbH & Co. KG*, 224 F.3d 1308, 1317, 55 USPQ2d 1804, 1810 (Fed. Cir. 2000). The recited holdings of these cases further explain that the doctrine of claim differentiation applies only where there is an absence of difference in claim terms such so as to make a claim *superfluous*; superfluous meaning redundant; extra; unnecessary. *See, e.g.,* Merriam Webster's Collegiate Dictionary Tenth Edition at p. 1182. Applicants respectfully submit that there is no absence of difference in meaning in the terms of claim 26 and claim 31 that would render either of these claims superfluous that compels the construction that the Examiner has placed on these claims under the cited authorities.

Applicants respectfully submit that dependent claim 31 includes all the limitations of claim 26 but specifies a further limitation of the subject matter claimed. *See* 35 U.S.C. § 112, fourth paragraph. It is perfectly reasonable, and in fact compelled by the statute, that claim 26 claims all types of interfaces between the transponder and the receiver, and claim 31 is limited to those systems having a wireless interface between the transponder and the receiver.

I. Claims 37 and 38 are separately patentable over claims 26, 28-33, 35, 36, 39 and 40.

Appellants submit that claims 37 and 38 are separately patentable over the cited prior art references from the group of claims 26, 28-33, 35, 36, 39 and 40. None of these references disclose or suggest the recitation in dependent claim 40. There is no suggestion in Ruppert to modify Hennige or Fernandes to embed the transponder in a transaction card, such as a key chain, pager, watch, clothing, key or transaction card. Therefore, even this combination does not support a *prima facie* case of obviousness since each and every claim limitation of claims 37 and 38 are not disclosed in a combination of these references. The rejection of claims 37 and 38 over the various grounds asserted above should be overruled and claims 37 and 38 should be identified as separately patentable from claims 26, 28-33, 35, 36, 39 and 40.

J. Claim 40 is separately patentable over claims 26, 28-33 and 35-39.

Appellants submit that claim 40 is separately patentable over the cited prior art references from the group of claims 26, 28-33 and 35-39. None of these references disclose or suggest the recitation in dependent claim 40. There is no suggestion in Ruppert modify Hennige or Fernandes to register the financial account information via a network registration interface.

The Examiner has asserted that Fernandes discloses "registering the financial account information (activating the credit card) via a network registration interface (a telephone)." *See* Final Rejection at ¶ 9. The Examiner apparently equates "registering" with "activating," but gives no reason for such a construction. Applicants submit that "registering" is a very different process from "activating." *See* Specification at p. 9, lines 4-6 ("the registration 122 may accept a preexisting credit card number for registration with the transponder 102"). The specification states that the user is interrogated to "identify or select which one or more accounts . . . [s/he] wishes to associate with the transponder." *See id.* at p. 9, lines 1-3. The Examiner has provided no reasoning, and Applicants submit that a person of ordinary skill in the art, would not understand that activation of an ordinary credit card permits a user to "identify or select" which accounts to associate with a credit card. Rather, account information is embedded in the magnetic stripe on the credit card before the card is activated. Therefore, Fernandes (or Hennige, for that matter) does not disclose registration of financial account information via a network

registration interface, as claimed in claim 40.

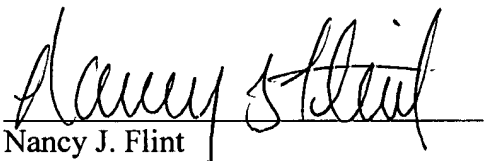
Therefore, there could be no reasonable expectation of success, or motivation, to combine these references to arrive at the invention of claim 40. The rejection of claim 40 over the various grounds asserted above should be overruled and claim 40 should be identified as separately patentable from claims 26, 28-33 and 35-39.

CONCLUSION

Appellants request that the rejections of all pending claims be overturned.

Respectfully submitted,

HUNTON & WILLIAMS LLP

By: 
Nancy J. Flint
Registration No. 46,704

Dated: June 17, 2004
Hunton & Williams LLP
Intellectual Property Department
1900 K Street, N.W.
Suite 1200
Washington, DC 20006-1109
(305) 810-2522 (telephone)
(305) 810-1615 (facsimile)
NJF/kdb

APPENDIX A

Pending Claims

1-25. (canceled)

26. A method of authorizing transponder-enabled transactions, comprising:

receiving by a transponder server of at least one of an issuing bank, a financial institution or a credit network at least some transponder identification information emitted from a transponder substantially upon presentation of both the transponder and a transaction for payment at a point of sale device, the payment comprising a payment amount;

retrieving at least some financial account information linked to the transponder identification information in an account table, the financial account information comprising at least one of account number information, account type information, account balance information, and account limit information;

determining by an authorization unit authorization for charging at least some of the payment amount to a financial account represented by the financial account information based on the payment amount and at least some of the financial account information; and

communicating authorization to the point of sale device.

28. The method of claim 26, further comprising paying the authorized payment amount to a merchant account associated with a merchant and the issuing bank or financial institution.

29. The method of claim 28, wherein the merchant account is associated with at least one of a merchant, retailer, or grocer.

30. The method of claim 26, further comprising issuing the transponder to the holder of the financial account.

31. The method of claim 26, further comprising receiving transponder identification information from the transponder via a wireless interface.

32. The method of claim 31, further comprising receiving transponder identification information via a RF interface or an infrared interface.

33. The method of claim 26, further comprising receiving at least some transponder identification information by the transponder server from multiple point of sale devices.

35. The method of claim 34, wherein the account type comprises a credit card, a debit card, a cash account, a telephone card account, a special premises account for use by employees of an entity, a stored value account or a rewards account.

36. The method of claim 26, wherein the point of sale device comprises a cash register.

37. The method of claim 26, wherein the transponder is embedded in a personal article.

38. The method of claim 37, wherein the personal article comprises one of a key chain, pager, watch, clothing, key or transaction card.

39. The method of claim 26, wherein the point of sale device is located at one or more of a restaurant, a grocery or a retail outlet.

40. The method of claim 26, further comprising registering the financial account information via a network registration interface.

Appln. No. 09/630,595
Appeal Brief dated June 17, 2004
Appendix B

searchMobileComputing.com Definitions - powered by whatis.com

transponder

powered by whatis?com

The term you selected is being presented by searchMobileComputing.com, a TechTarget site for Mobile Computing professionals.

A transponder is a wireless communications, monitoring, or control device that picks up and automatically responds to an incoming signal. The term is a contraction of the words **trans**mitter and re**sponder**. Transponders can be either passive or active.

A **passive transponder** allows a computer or robot to identify an object. Magnetic labels, such as those on credit cards and store items, are common examples. A passive transponder must be used with an active sensor that decodes and transcribes the data the transponder contains. The transponder unit can be physically tiny, and its information can be sensed up to several feet away.

Simple **active transponders** are employed in location, identification, and navigation systems for commercial and private aircraft. An example is an RFID (radio-frequency identification) device that transmits a coded signal when it receives a request from a monitoring

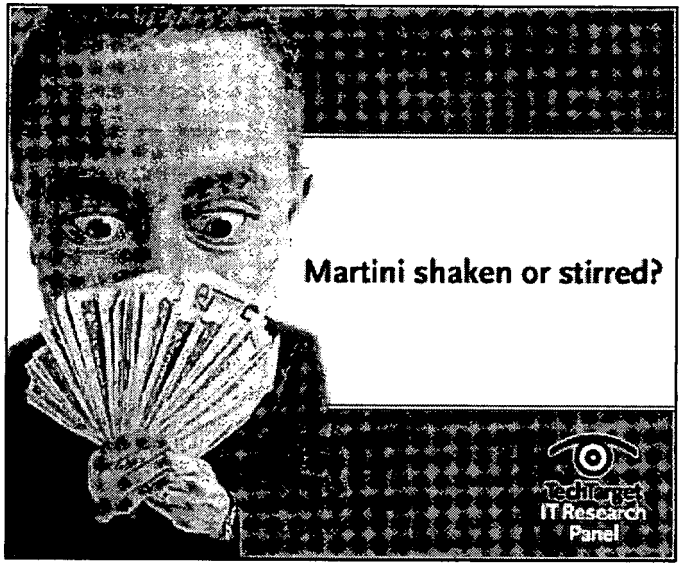
or control point. The transponder output signal is tracked, so the position of the transponder can be constantly monitored. The input (receiver) and output (transmitter) frequencies are preassigned. Transponders of this type can operate over distances of thousands of miles.

Sophisticated active transponders are used in communications satellites and on board space vehicles. They receive incoming signals over a range, or band, of frequencies, and retransmit the signals on a different band at the same time. The device is similar to a repeater of the sort used in land-based cellular telephone networks. The incoming signal, usually originating from a point on the earth's surface, is called the uplink. The outgoing signal, usually sent to a point or region on the surface, is the downlink. These transponders sometimes operate on an interplanetary scale.

>> Find products and vendors related to transponder.

Read more about it:

>> "How Stuff Works" explains how the transponder signal provides the controller with your aircraft's flight number, altitude, airspeed and destination.
>> "How Satellite Technology Works" describes the role of transponders in satellite broadcasts.
>> Tom Rogers provides a short paper on "Transponder Basics" for aircraft.



Last updated on: Apr 11, 2003

<< Back to previous page Go to whatis.com home page >>

Appln. No. 09/630,595
Appeal Brief dated June 17, 2004
Appendix C

Transponder News

A news service reporting on developments regarding the use of radio based tagging transponder systems for commerce and scientific applications. Covering the RFID technologies, EAS technologies and magnetic coupled techniques.

What are TRANSPONDERS

Transponders were originally electronic circuits that were attached to some item whose position or presence was to be determined. The Transponder functioned by replying to an interrogation request received from an interrogator, either by returning some data from the transponder such as an identity code or the value of a measurement, or returning the original properties of the signal received from the interrogator with virtually zero time delay, thereby allowing ranging measurements based on time of flight. As the interrogation signal is generally very powerful, and the returned signal is relatively weak, the returned signal would be swamped in the presence of the interrogation signal.

The functioning of the Transponder was therefore to move some property of the returned signal from that of the interrogation signal so that both could be detected simultaneously without the one swamping the other. The most common property to change is the transmission frequency meaning that the transponder might receive the interrogation frequency at one frequency, and respond on another frequency that is seperated sufficiently with regard to frequency so that both may be detected simultaneously.

Transponders were initially used in World War 2 on aircraft to identify the aircraft using IFF (Identify Friend or Foe), where friendly aircraft would respond to secret preprogrammed interrogation codes and indicate to the radar operators that they were friendly aircraft. Today Transponders are still used extensively on commercial aircraft to relay to the radar operators the height and identity of the aircraft on their radar displays.

Another important use for transponders has been in the measurement of distance. Here the interrogator sends a signal to the transponder, which immediately responds on another frequency. By measuring the time from the sending of the initial signal by the interrogator, to the receipt of the signal from the transponder, and calculating the effective double path travelled using the speed of light, the distance between the transponder and the interrogator can be determined. The accuracy of such systems is limited to fractions of a meter using electromagnetic

propogation systems due to the limits in determining the transmission times with sufficient accuracy. (A system called Tellurometer invented in the 1960's improved this resolution over distances of 100's of kilometers to a few centimeters, but although this still used transponders, it was not based on the principle of time of flight).

Another major category of Transponders which is not the subject of this newspaper, is the use of transponders in radio relay systems such as fixed/mobile radio networks and satellite transmissions. The same principle applies in that the data is transmitted on a carrier frequency at one frequency, and rebroadcast on a carrier of another frequency, allowing the strong and weak signals to co-exist.

Transponder systems have recently started to become major players in the field of electronic identification. Within this application, it is necessary to make the transponders as cheap as possible, and to rather build the sophistication into the readers. This lack of sophistication generally means that changing the transmission frequency is no longer an option, as the frequency translation needs expensive and complex tuned circuitry. Instead the transponders have given up the ranging ability and rather time slice the communications channel with the interrogator. Here the interrogator (called a reader) sends an interrogation signal for a limited time. The transponder receives the signal and waits for its completion, and then responds on the same frequency with its identity and data code. (There are more complex methods but this covers the basics.)

The devices are sometimes called transponders and are also sometimes called *tags*, most probably because their end application eventually will be the tagging of goods.

Transponders vary in selling prices from $1000 US down to $0-20, depending on application and features.

What are RFID systems

RFID stands for *radio frequency identification*. It is a widely varied collection of technologies for various applications, ranging from the high speed reading of railway containers to applications in retail that can be regarded as a potential successor to the barcoding technologies in use today. RFID is based around radio or electromagnetic propogation. This has the ability to allow energy to penetrate certain goods and read a tag that is not visible thereby to identify those goods remotely, either in the form of an identity code or more simply that something is present (EAS). Different frequencies of the radio system result in different reading ranges and properties of the system.

Commonly available tags have an operating frequency in the range from 60kHz to 5.8GHz depending on application.

In operation one can generally say that there are three different types of technologies being implimented. They are:

- Magnetic based RFID technologies
- EAS based technologies
- Electric field based RFID technologies

Appln. No. 09/630,595
Appeal Brief dated June 17, 2004
Appendix C

If you want to contact the editor about additional information or questions, send mail to The editor, Transponder News

Transponder News, located at http://rapidttp.com/transponder

*** NOTE*** Fast mirror and backup site **BOOKMARK FOR REFERENCE** Main site *** NOTE***

Transponder News © / process@pixie.co.za

MENU
Home
Term of the Day
New Terms
New Links
Quick Reference
Did You Know?
Search Tool
Tech Support
Webopedia Jobs
About Us
Link to Us
Advertising

Compare Prices: go
HardwareCentral

Talk To Us...
Submit a URL
Suggest a Term

transponder

Last modified: Wednesday, September 25, 2002

A wireless communications device usually attached to a satellite. A transponder receives and transmits radio signals at a prescribed frequency range. After receiving the signal a transponder will at the same time broadcast the signal at a different frequency. The term is a combination of the words ***transmitter*** and ***responder***. Transponders are used in satellite communications and in location, identification and navigation systems.

•**E-mail this definition to a colleague**•

Report an Error

*For internet.com pages about **transponder CLICK HERE**. Also check out the following links!*

LINKS = Great Page!

Related Categories

Satellite Communications

Telecommunications

Wireless Computing

Related Terms

downlink

DSS

GEO

IoS

LEO

MEO

solar fade

uplink

VSAT

WLAN

(Webopedia)
Give Us Your Feedback

Appln. No. 09/630,595
Appeal Brief dated June 17, 2004
Appendix C

transponder

transponder: 1. An automatic device that receives, amplifies, and retransmits a signal on a different frequency. **2.** An automatic device that transmits a predetermined message in response to a predefined received signal. *Note:* An example of transponders is in identification-friend-or-foe systems and air-traffic-control secondary radar (beacon radar) systems. **3.** A receiver-transmitter that will generate a reply signal upon proper interrogation. [JP1]

This HTML version of Telecom Glossary 2K was last generated on Wed Feb 28 15:39:21 MST 2001. References can be found in the Foreword.

Appln. No. 09/630,595
Appeal Brief dated June 17, 2004
Appendix C

Transponder

From Wikipedia, the free encyclopedia.

In telecommunication, the term **transponder** has the following meanings:

- An automatic device that receives, amplifies, and retransmits a signal on a different frequency.
- An automatic device that transmits a predetermined message in response to a predefined received signal.
- A receiver-transmitter that will generate a reply signal upon proper electronic interrogation.

In particular, a communications satellite's channels are called transponders, because each is a separate transceiver or repeater. Older television satellites in the C band have 24 transponders, while newer Ku band ones have 32. With digital video data compression and multiplexing, several video and audio channels may travel through a single transponder on a single wideband carrier. Original analog video only has one channel per transponder, with subcarriers for audio and ATIS. Non-multiplexed radio stations can also travel in single channel per carrier (SCPC) mode, with multiple carriers (analog or digital) per transponder. This allows each station to transmit directly to the satellite, rather than paying for a whole transponder, or using landlines to send it to an earth station for multiplexing with other stations.

Another example of transponders is in identification friend or foe systems and air traffic control secondary radar (beacon radar) systems.

Source: partly from Federal Standard 1037C and from MIL-STD-188 and from the Department of Defense Dictionary of Military and Associated Terms